UNITED NATIONS
ECONOMIC
AND
SOCIAL COUNCIL

LIMITED
E/CN.11/WRD/MKG/L.106
4 July 1963
ORIGINAL : FRENCH

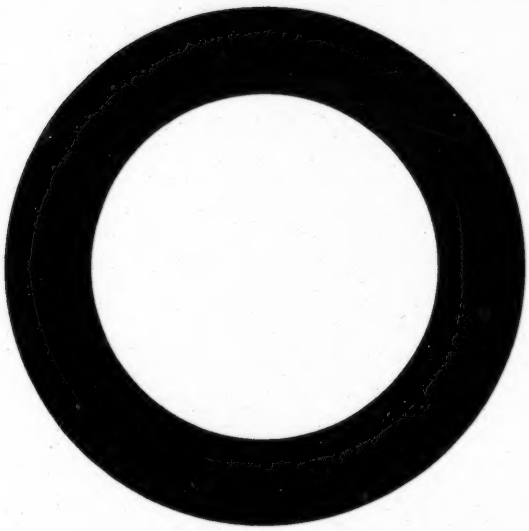
UNITED NATIONS
ECONOMIC COMMISSION FOR ASIA AND THE FAR EAST.

Committee for Co-ordination of Investigations
of the Lower Mekong Basin, (Cambodia, Laos,
Thailand and the Republic of Viet-Nam)
Twenty-first Session (Special)
22 - 24 May 1963
Bangkok, Thailand

SURVEY OF BEDLOAD SEDIMENT TRANSPORTATION OF STUNG SEN AND TONLE SAP IN CAMBODIA, BY TRACERS

Plan of Operation

Measurement Campaign June-July 1963



SURVEY OF BEDLOAD SEDIMENT TRANSPORTATION
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The broad lines of a survey contemplated by the International Atomic Energy Agency (I.A.E.A.) for the Mekong Committee in the rivers Stung Sen and Tonlé Sap was set forth in a previous note of the Laboratoire National d'Hydraulique (Ref.HyFl.6 from 22 January 1963).

The on the spot location of the experiment and contribution clauses to the survey by the various organizations involved was spelt out during the mission in Cambodia of Mr.DANION, Engineer of the Laboratoire, from 19 to 26 March 1963, in cooperation with Mr. BERTHELOT, hydrometeorologist of the Mekong Committee.

1. LOCATION OF ON THE SPOT EXPERIMENT (See attached map).-

Two areas have been selected for the first measurement campaign in June and July 1963:

1.1.) On the Stung Sen

The shifting of the floating village of Phat Sanday during the floods does not allow any work in the reach Phat Sanday – Neang Sau.

Therefore two straight reaches of 900 and 700 m between the villages of Neang Sau and Kompong Chamlang have been adopted: on the other hand the topographical work prerequisite to the measurement campaign is easier in this area where the vegetation on the banks is clear.

1.2.) In the Tonlé Kramom and the Tonlé Sap

The area under survey is limited by the first bamboo dam traps near Prek Ksah village (profile 1) and the mouth of Prek Peam Sen (profile 2).

The bush covered sands shoals (samras) will be located during a reconnaissance in the dry season. The experiment site will then be selected in the obstacle free area by echo sounding.

Any danger of water pollution is excluded owing to the size and limited activity of the tracers (dm = 250).

2. The following organizations will participate in the preliminary survey measurement campaign:

2.1.) International Atomic Energy Agency Mission (June-July 1963) of 4 experts :

- Mr. FORSBERG, Engineer of the Agency (whose stay in Cambodia will not exceed one month),
- Mr. HEUZEL, Engineer of Centre de Recherches et d'Essais de Chatou,
- Mr. COURTOIS and ANGUENOT, Engineers of Centre d'Etudes Nucléaires de Saclay.

2.2.) The Mekong Committee with Mr. BESLON, W.M.O. hydrometeorologist in Phnom Penh.

.../...

2.3.) The French Economic and Technical Mission of Assistance in Cambodia with:
- Mr. CARBONNEL, entrusted with the sedimentation budget survey of the Great Lake (Tonlé Sap project) within the frame of the Mekong Scheme,
- Mr. GUISCAFRE, who is studying the hydrologic budget of the Great Lake.

2.4.) The Department of Hydraulics and Navigation of the Public Works in Cambodia.

3. SCOPE OF ACTIVITIES

3.1.) Mekong Committee

3.1.1.) The topographic preliminary work on the Stung Sen banks will be carried out under the supervision of Mr. BESLON before the A.I.E.A. mission arrives in Cambodia (about 1st June 1963)

The preliminary works involved consist of:

a) Establishment of a network of markers on both banks of the Stung Sen in the two straight reaches previously surveyed between Neang Sau and Kompong Chamlang villages.

The markers will be arranged in alternate rows on the banks. On each bank the markers have to be some 150 m apart. Panels will be fastened to trees above the maximum water level.

A triangulation connecting the markers will have to be carried out on both reaches.

The distance from the bank, at right angels with the markers, will also be noted, thus allowing a more precise determination of Stung Sen river bed.

b) Setting up of 3 staff gages in the Stung Sen at
Kompong Chamlang
Neang Sau
and at the mouth of this river (point A of attached plan)

The staff gage datum will refer to the levelling network of Cambodia.

.../...

3.1.2.) Twenty bamboo buoys will be made under the direction of Mr. BESION, by 1 June 1963 (see paragraph 3.3.1).

3.1.3.) Hydrologists of the Mekong Committee of Cambodia under the supervision of Mr. Beslon will take discharge measurements of the Tonlé Sap at Prek Dam during the 1963 rainy season.

3.1.4.) The Mekong Committee of Cambodia will supply the I.A.E.A. mission with:
- a launch for liaison (see paragraph 3.3.2.)
- a fathometer (Raythéon 119 A).

3.2.)The French Mission of Economic and Technical Assistance in Cambodia (M.F.A.E.T)

Mr. CARBONNEL and GUISCAFRE, M.F.A.E.T. experts, will participate in the survey at no cost to the M.F.A.E.T. The M.F.A.E.T. assistance will consist in personnel and equipment.

3.2.1.) Mr. CARBONNEL will make, during the dry season, a reconnaissance of the Tonlé Kramom and Tonlé Sap samra free areas, in the selected general survey area (see paragraph 1.2.).
He will carry out about 3 drillings in the Stung Sen river bed axis between Neang Sau and Kompong Chamlang and should it prove necessary in the Tonlé Kramom - Tonlé Sap area.
In his peronal investigation programme a turbidity measurement campaign of the Tonlé Sap waters at Kompong Chhnang, Brala Méas and Kompong Prèas.is also scheduled.

3.2.2.) During the rainy season Mr. GUISCAFRE will take discharge measurement of the lower Stung Sen at the rate of 3 per month or 6 per month if possible according to the mission personnel and equipment facilities.

He will take advantage of the discharge measurements for turbid water sampling with a view to determining the suspended sediment transport of the river.

3.2.3.) a) The M.F.A.E.T. will put at the I.A.E.A. mission's disposal, the following personnel from Mr. CARBONNEL's staff:
- 2 operators(one of which being the master of the junk)
- 2 coolies

.../...

b) The M.F.A.E.T. will possibly put its Snoc Trou floating base at the disposal of the I.A.E.A. mission, subject to the agreement of the Fisheries Department of Cambodia.

On the other hand the M.F.A.E.T. will at no cost to the I.A.E.A. mission supply a vehicle for its experts. It will also loan to the I.A.E.A. mission.

Mr. CARBONNEL's junk, complete with 15 HP outboard engine and sextant.(*)

3.2.4.) The expenses relating to personnel, food and maintenance will be borne by the I.A.E.A. mission.

3.3.)The Hydraulic and Navigation Department of Public Works of Cambodia:

3.3.1.) The necessary personnel for the preliminary works will be provided to Mr. BESLON by this Department (refer paragraph 3.1.1. and 3.1.2.), the duration of this work has been estimated 90 coolie-days. I.A.E.A. will bear the cost for the wages and food of Public Works personnel, as well as for the procurement of equipment for the making of buoys and markers.

3.3.2.) Should the Mekong Committee be unable to supply a liaison launch, the Public Works of Cambodia will provide the I.A.E.A. mission with a sampan.

In any case, the Public Works will loan a 18 HP outboard engine to the I.A.E.A. mission.

3.3.3.) The Public Works will place an operator at the disposal of I.A.E.A. On the other hand the Public Works will recruit one second operator (to be trained) and 2 coolies for the June-July 1963 period.

The first operator will be on the payroll of Public Works, the second and the 2 coolies on the payroll of I.A.E.A., moreover I.A.E.A. will bear the cost of food for the whole personnel.

(*) The I.A.E.A. mission would bring its own drilling equipment.

SIGNATURES

Agreed, on behalf of the Parties, by the undersigned:

Date: 23 May 1963

(Signed) Peng Tonn
For the Government of Cambodia

Date: 23 May 1963

(Signed) PhouamKeoh Phanareth
For the Government of Laos

Date: 23 May 1963

(Signed) Boonrod Binson
For the Government of Thailand

Date: 23 May 1963

(Signed) Trinh-Ngoc-Sanh
For the Government of the Republic of Viet-Nam

Date:

(Signed) F. Roux
For the Government of France

Date: 13 June 1963

(Signed) J.N. Corry
For the International Atomic Energy Agency

Date: 23 May 1963

(Signed) C. Hart Scheaf
Executive Agent
Committee for Coordination of Investigations of the Lower Mekong Basin